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LAND AND FRESH WATER SHELLS IN THE ROCKY MOUNTAINS.

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In the October NAUTILUS there is a short paper by my friend Mr. Hanham upon the shells found by himself during a trip in that rather out of the way Canadian locality, the Gaspé region.

It may be interesting to have a record of a small collection made by me a few weeks ago in another little-known locality at the opposite end of the Dominion viz.: Laggan near the summit of the Rocky Mountains.

I had received earlier in the year from Mr. T. R. Bean of Laggan, a nice little collection of shells which included specimens of what Dr. Sterki considers to be the true *Pupa hoppii* of Möller, and this tempted me to stay over for a couple of days when passing through Laggan last September on my way to Toronto.

Dr. Bean most kindly showed me all the best localities known to him, and our united exertions were rewarded by the discovery of several species that he had not previously recognized, including one which I believe had not before been found in Canada.

In the rivers, the Bow and the Pipestone, we could not find any shells at all, the waters being cold and the stream rapid in each case, but in all the little creeks and swamps *Limnea palustris* abounded and *Planorbis parvus* occurred in less numbers. In a small lake not more than a mile from Laggan we found, in addition to the

species above named, 3 others—*Planorbis trivolvis* Say, common, *Pisidium abditum* Hald., rare, and a *Valvata*, which I suppose to be *virens* Tryon, 6 specimens only.

No *Physa* of any kind were observed, nor has Dr. Bean as yet found any species of *Unio*, *Anodonta*, or *Sphærium*.

The land shells enumerated below were all found under logs or under pieces of board in the neighborhood of the settlement and along the banks of the rivers. *Vitrina limpida* Gould, *Hyalina arborea* Say, *Hyalina radiatula* Alder, *Conulus julvus* Drap., *Patula striatella* Anth., *Vallonia costata* Müll. (form *gracilicosta* Reinh., teste Sterki), *Ferussacia subcylindrica* Linn., *Succinea avara* Say, and a species of *Vertigo* closely resembling *gouldii*, were all common.

Pupa hoppii Möller, was not very common in the spots I searched and I only secured 8 specimens. Still less frequent was *Pupa alticola* Ingersoll, which I had here the pleasure of finding for the first time.

Dr. Bean has in his collection, besides the above, specimens of *Pupa pentodon* Say, which he took a few miles to the west of Laggan; and a second species of *Succinea* perhaps *S. ovalis* Gould. Lastly some slugs which were probably *Limax hyperboreus* West., were observed by us but not collected.

The altitude of Laggan is about 5,200 feet above sea level and the locality is interesting, as being nearly at the summit of the Rocky Mountain range, which seems to form, in Canada, a hard and fast line of demarcation between the eastern and western species of Mollusca.

HÆCKEL'S PLANKTONIC STUDIES.

All interested in the life of the open and deep sea, the so-called pelagic or Plankton fauna, will be interested to read the translation of Prof. E. Hæckel's paper of 1890, which is printed in the Report of the U. S. Fish Commission for 1889-91, pp. 565-641.

Some of the German polemics are omitted, though a sufficient amount remains to spice the article in a lively manner. There is much reason to believe that Hæckel, who has had no experience in deep sea work, has overestimated the evidence in favor of zonary distribution of life in the deep sea. Certainly the observations of